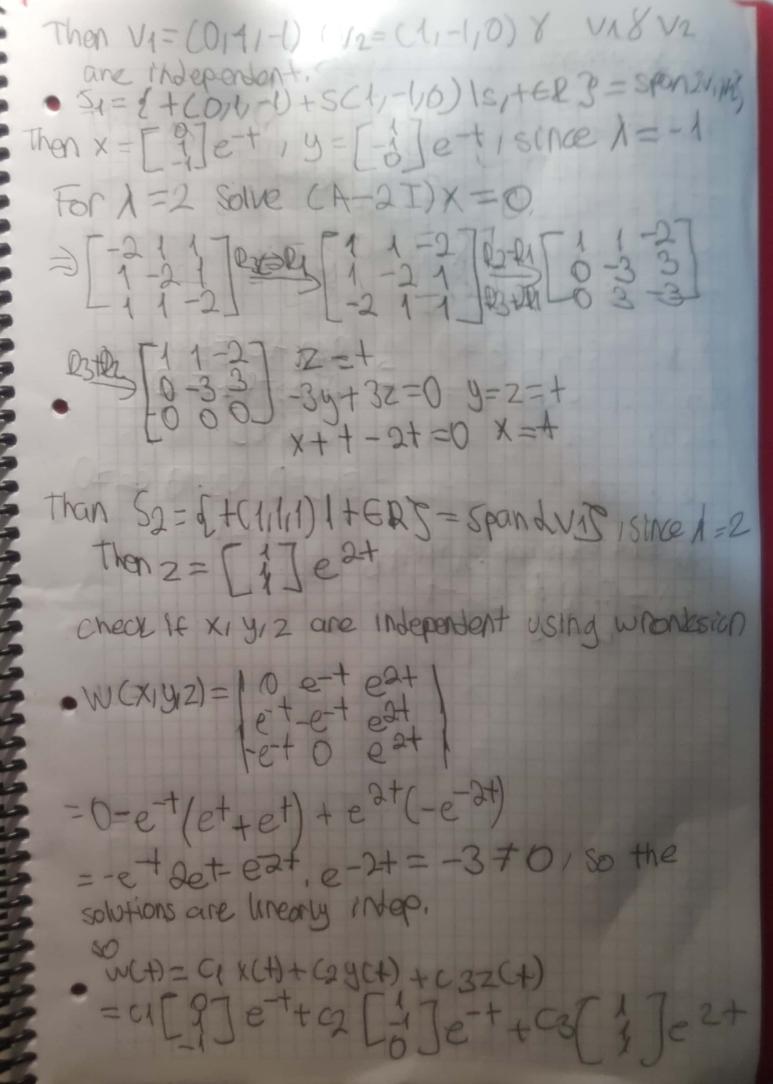
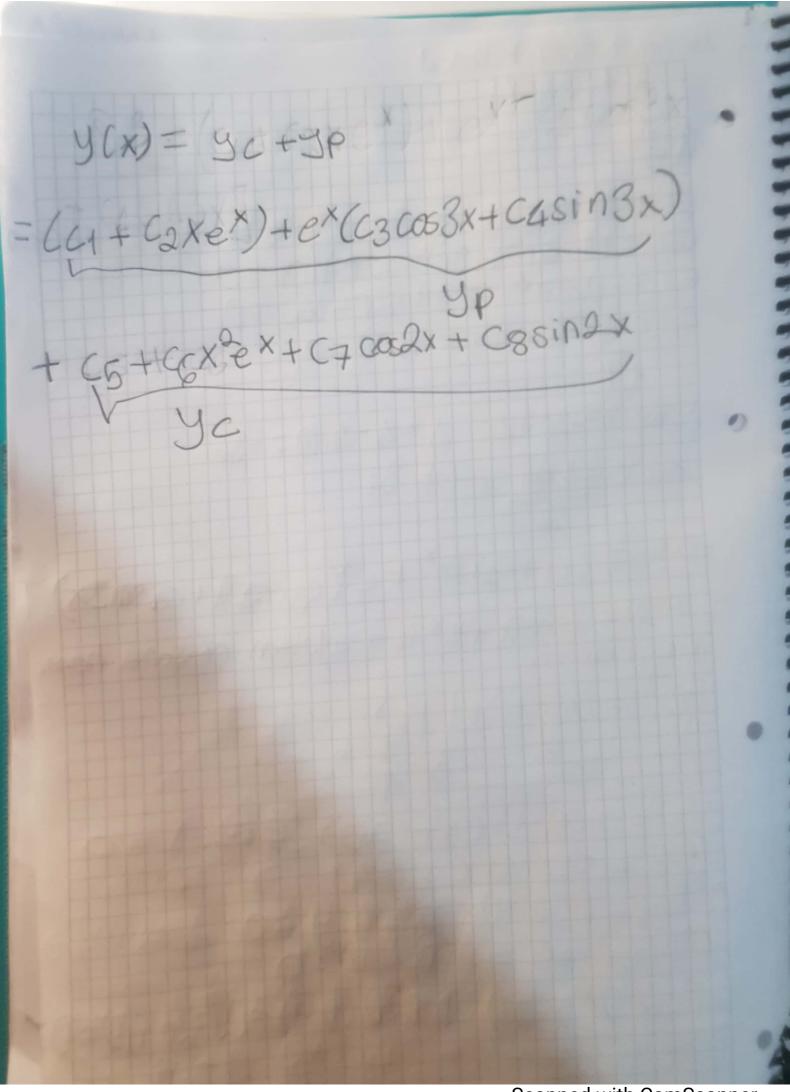


Scanned with CamScanner



Hence general solutions are x(+)= Cae-++c3e2+ y(+) = CIe+-cze++cze2+ 2C+) = -CIe++ Czez+ use initial values x (0)=01 y (0)=1, z (0)=-1 to FIND C1/C2/CB $x(0) = c_2 + c_3 = 0$ 203+4=1 203-03=0 4(0)=C1-C2+C3=1 69=263 2(0)=-41+62=-1 303=0 C320 C2=U So the general solution is W(+)= P & = e-+ Scanned with CamScanner

Mehmet fora Kurucu 21703404 00 Solve the associ hom die. yell 4y 13)+15y"-22y'+10y=1 L(r) = r4-413+1512-221+101=0 = (r-1)(r3-3r2+12r-10)=0 = (1-12 (12 21+10)=0 Solve r2-2r+10 D=4-4.10=-36 X1/2 = 2 ± 61 = 1 ± 3i => yc= ((1+C2x)ex + ex((3cos3x+cusin3x)) F(x) = 2cos2x + ex is a solution of some hom. d.e. Find it $F(x) = \cos(2x) + 1 + e^{x}$ 9(s)=5(s-1)(s-(2i))(s+2i)=0 8(5) = S(S-1) (534)=0 3(D) y = P(D-4) (D2+4) 4=0 15(D) F(x)=0=0 =0 (D) L(D)=0 => 0(0-1)(0-2i)(0+2i)(0-1)2(0-2r+10=1) 10045) 6, 1020 =20 1+301-3;



Q3) x2g"+xy'+y=lnx,x>0 Try to convert this to non-homogenous equation with constant coefficients, in other works convert this to Dy=(an0"+ an + 0"+ ", + 0,10 + 90)y = F(x) where domain are constants. For this use substitution x=ek= Inx=k 第二年 司 如 五水 = -1 2 2 + 1 2 2 2 0x -1 25 + 1 22y2 x2 223 = 222 - 23 Pluginto x29"+xy'+y=lnx ラングマーラジャーラジャン=X 2 3 - 4 4 = K

Scanned with CamScanner

Mon, it is converted to the descred sound Solve 924 + A=F () LCr)=12+(=0) [= =i 4c = CISINK + CACOSK @ F(k)=k put y(x)=k and observe that 5 a particular solution since 327 = 0 9CK = K 0 024 + 4 = K W MP=7 3 y=qsink + cocosk + k Hug in k=lnx 3= CASIN (INX) + GCOSCINX) + INX

Scanned with CamScanner